

Northside Park, Hampton

BEACH WATER QUALITY REPORT

SUMMER 2004



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BACKGROUND

The New Hampshire Department of Environmental Services (NHDES) has operated its Public Beach Inspection Program, or Beach Program, for over twenty years. Coastal beach monitoring began in 1989 and has continued through the present. NHDES recognizes the threat to public health at public beaches and continues to monitor public beaches throughout the state for the presence of pathogenic organisms. Coastal beaches are monitored for the presence of the fecal bacteria *Enterococci*. These fecal bacteria are present in the intestines of warm-blooded animals including humans. Fecal bacteria, when present in high concentrations and ingested, can commonly cause gastrointestinal illnesses such as nausea, vomiting and diarrhea. They are also known as indicator organisms, meaning their presence in water may indicate the presence of other potentially pathogenic organisms.

In October of 2000, the United States Environmental Protection Agency (EPA) signed into law the Beaches Environmental Assessment and Coastal Health (BEACH) Act. The BEACH Act is an amendment to the Clean Water Act that authorizes the EPA to award grants to eligible states. The purpose of the BEACH Act is to reduce the risk of disease to users of the nation's recreational waters. BEACH Act grants provide support for development and implementation of monitoring and notification programs that help protect the public from exposure to pathogenic microorganisms in coastal recreation waters.

NHDES received grant funding in 2002 to develop and implement a beach monitoring and notification program consistent with EPA's performance criteria requirements published in the *National Beach Guidance and Required Performance Criteria for Grants* document (www.epa.gov/waterscience/beaches/grants). NHDES has successfully met all requirements and continues to expand the monitoring and notification program. In 2002, only 9 coastal beaches were monitored, in 2003 fifteen coastal beaches and in 2004 sixteen coastal beach were monitored on a routine basis.

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Beach Description

Northside Park is approximately 3,050 feet long, or slightly more than ½ mile. It is a mostly sandy beach with some rocky and muddy sections present during low tide.

The beach is frequently used by residents and vacationers for swimming and relaxing. Life guards are present but sanitary facilities are not available during the summer. There are two public access points to the beach area from parking lots. The main public access to the beach is at the southern end through the town park entrance off Ancient Highway. Parking is for Hampton residents only. Most of the beach (approximately 90%) is adjacent to residences. Other than the town park and the residences, two motels have access to the beach.

Since 2002, the New Hampshire Department of Environmental Services' Beach Inspection Program has conducted 21 inspections at Northside Park. At six of these inspections, animals or evidence of animals was noted on the inspection form. Seagulls were the most prominently viewed species; the second most commonly sighted animals were dogs. On all occasions, however, only a small number of animals were reported.

Below is a brief description of the three sampling stations at Northside Park, Hampton. These stations are pictured in Figure 1.

- The left sample station is located off of Route 1A. Park at the Seaside Motels and walk past the motel office to their beach access. Collect a sample in front of the access.
- The center sample station is located 14 houses to the left of the main beach entrance on Ancient Highway, which is located off of Route 1A. The sample is collected in front of the grey condominiums.
- The right sample station is located in front of the second house to the left of the main beach access.

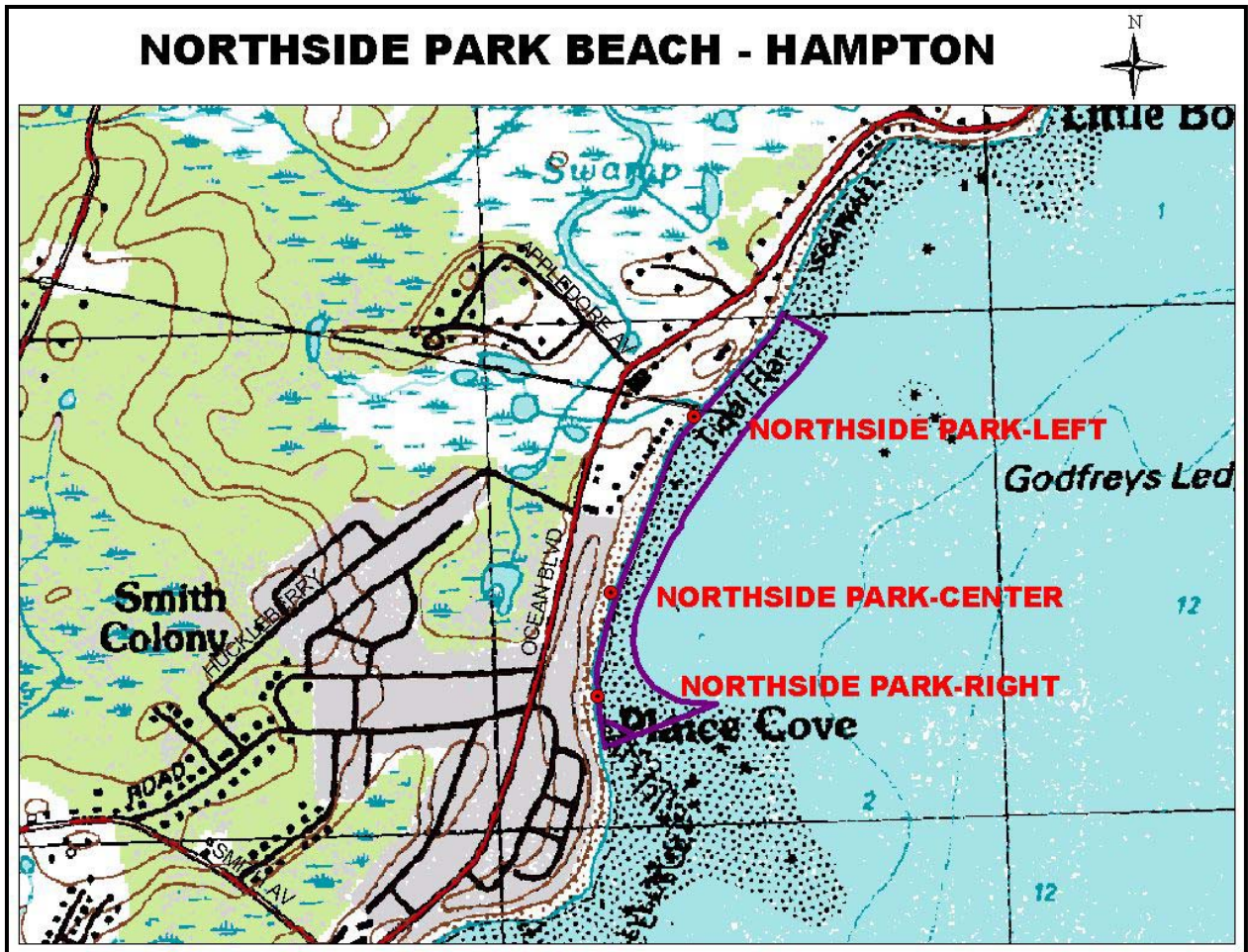


Figure 1. Map of Northside Park

Tier Status and Sampling Frequency

The Beach Program developed a risk-based beach evaluation process and tiered monitoring approach and implemented this approach during the 2003 beach season. Beach evaluations are conducted annually to determine potential health threats to the public. Evaluations are based on several criteria in three main categories: beach history, microbial pathogen sources, and beach use. Based on these criteria, beaches are assigned either a Tier I or Tier II status. Tier I are high priority beaches that have an increased potential to affect public health while Tier II are low priority beaches that have less potential to affect public health. Beach sample frequency is based on the Tier statuses; Tier I beaches are sampled weekly and Tier II beaches are sampled every other week.

The Beach Inspection Program began sampling Northside Park in 2002. It was categorized as a Tier II beach based on the Beach Program's Risk-Based Evaluation ranking system. This ranking indicates that the beach is not regularly used by the public and few potential pollution sources were identified that could negatively affect public health.

Water Quality

Beaches are monitored to ensure compliance with State Water Quality Standards. Marine waters are analyzed for the presence of the fecal bacteria Enterococci. Enterococci are known as indicator organisms, meaning their presence may indicate the presence of pathogenic bacteria. The state standard for Enterococci at public beaches is 104 counts/100 mL in one sample, or a geometric mean of 35 counts/100 mL in three samples collected over sixty days. Standard exceedances require the issuance and posting of a beach advisory. Beach advisories remain in effect until subsequent beach sampling indicates safe water quality conditions.

The number of samples collected at each beach is determined by the beach length. Beaches less than 100 feet in length are sampled at left and right locations 1/3 of the distance from either end of the beach. Beaches greater than 100 feet in length are bracketed into thirds and sampled at left, center and right locations. Routine sample collection may be enhanced by sampling known or suspected pollution sources to the beach area. Also, storm event sampling may be conducted at beaches where wet-weather events are expected to affect beach water quality.

The 2004 sampling season began June 1st. June was cooler and drier than normal, July was cooler and wetter than normal, while August was warmer and wetter than normal. The sampling season encompassed 108 days, of which precipitation was recorded on 42 days (based on Seabrook WWTF recorded precipitation). Twenty beach days (normal beach hours are considered 9:00 a.m. to 5:00 p.m.) were directly affected by precipitation.

Northside Park was sampled once per week from June 1st through Labor Day. Three samples were collected at left, center and right stations (Figure 1). There were a total of seven routine inspections performed and 21 samples collected in 2004. One re-sample was performed on June 3, 2004 after the elevated bacteria level at the right station on June 1, 2004. The re-sample indicated bacteria levels were back to normal. An advisory was not posted because this occurred prior to the official beach season.

Table 1 includes the Enterococci data from each sampling event in 2004. Overall, the Enterococci levels were very low. Enterococci were elevated at the right station on the first sampling event of the year. Inspection data from 6/1/2004 reveal that there was a recent storm event and the water conditions were turbid. Sediment and/or seaweed often contribute to turbid conditions. Both sediment and seaweed can harbor bacteria and when disturbed can release bacteria into the water column.

Figure 2 depicts the 2004 Enterococci data in comparison to the state standard. Enterococci levels were well below the state standard for the majority of the season.

Table 1. Northside Park Beach Enterococci Data 2004

Sample Date	Station Name	Results (counts per 100 mL)
06/01/2004	Northside Park – Left	10
	Northside Park – Center	30
	Northside Park – Right	150
06/03/2004	Northside Park – Left	20
	Northside Park – Center	40
	Northside Park – Right	30
06/15/2004	Northside Park – Left	<10
	Northside Park – Center	<10
	Northside Park – Right	<10
06/28/2004	Northside Park – Left	<5
	Northside Park – Center	<10
	Northside Park – Right	<5
07/13/2004	Northside Park – Left	20
	Northside Park – Center	<10
	Northside Park – Right	<10
07/26/2004	Northside Park – Left	<10
	Northside Park – Center	<5
	Northside Park – Right	<5
08/09/2004	Northside Park – Left	<5
	Northside Park – Center	10
	Northside Park – Right	<5
08/25/2004	Northside Park – Left	<10
	Northside Park – Center	<10
	Northside Park – Right	<10

Figure 2 depicts the Enterococci data relative to the state standard for coastal beaches.

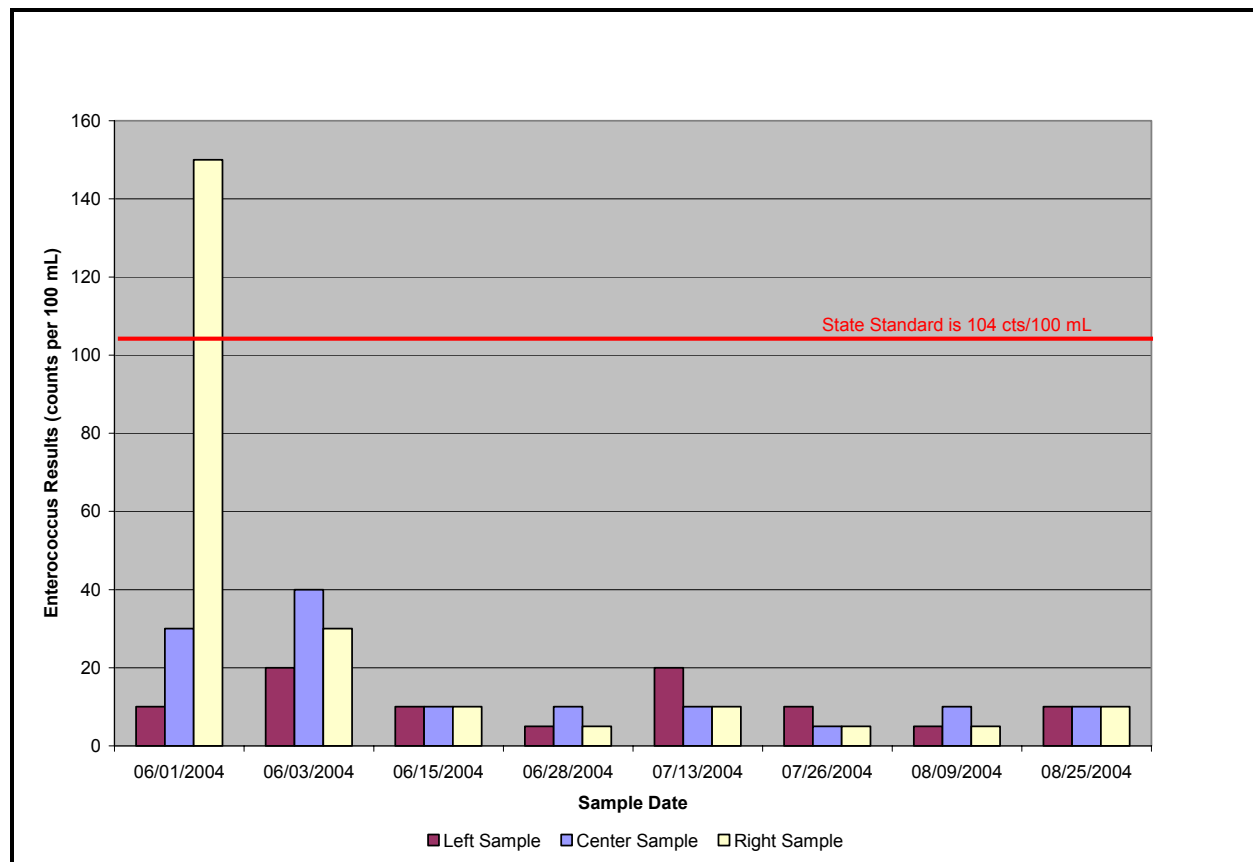


Figure 2. Northside Park 2004 Beach Enterococci Data

The Beach Program staff analyzed whether a relationship exists between elevated Enterococci levels and precipitation at Northside Park Beach. Analyses of the data indicate no direct correlation. DES will continue to monitor precipitation data and Enterococci levels. Precipitation often causes elevated bacteria levels due to runoff in the watershed.

Areas of Concern

The Beach Program has not identified any areas of concern at Northside Park.

Thoughts for the Future

- The Town of Hampton, local businesses, or school groups should consider joining NHDES' Adopt-a-Beach Program. The program would consist of beach clean-ups and water quality monitoring. DES would conduct training sessions and participate in

education and outreach activities for the community. If you are interested, please contact Sara Sumner at 603-271-8803 or ssumner@des.state.nh.us.